Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-5 canceled

6. (previously presented):A magnetometer comprising:

a silicon substrate;

a plurality of electrically conducting strings of varying lengths, each string being placed on the substrate and being capable of receiving a current;

means for supporting each string in tension at two locations on the substrate, the string being capable of vibrating in any direction orthogonal to its axis;

the magnetometer being placed in a magnetic field to be detected, the magnetic field being perpendicular to the direction of the current and producing a Lorentz Force perpendicular to the string, the Lorentz Force causing deflection in the string along multiple axes that can be detected, the current being switchable between the strings to change the resonant frequency of the magnetometer and thereby the magnetic field that can be detected.

Claims 7-9 canceled

10. (previously presented): A magnetometer array comprising a plurality of magnetometers, each magnetometer comprising:

a silicon substrate;

a plurality of electrically conducting strings of varying lengths, each string being placed on the substrate and being capable of receiving a current;

means for supporting each string in tension at two locations on the substrate, the string being capable of vibrating in any direction orthogonal to its axis;

the magnetometer being placed in a magnetic field to be detected, the magnetic field being perpendicular to the direction of the current and producing a Lorentz Force perpendicular to the string, the Lorentz Force causing deflection in the string along multiple axes that can be detected, the current being switchable between the strings to change the resonant frequency of the magnetometer and thereby the magnetic field that can be detected;

wherein the magnetometers are joined end to end with the portion of the string connecting two magnetometers not in tension.

Claim 11 canceled

12. (previously presented): A magnetometer comprising:

an electrically conducting string comprising an insulating fiber coated with an electrically conducting material, the string receiving a current;

means for supporting the string in tension at two locations, the string being capable of vibrating in any direction orthogonal to its axis;

a light source for inserting light into the fiber, wherein the fiber is light conducting; and

means for detecting the deflection in the fiber, the means for detecting comprising:

a first aperture in the conducting material on the fiber; and

a detector for detecting light escaping through the aperture;

the magnetometer being placed in a magnetic field to be detected, the magnetic field being perpendicular to the direction of the current and producing a Lorentz Force perpendicular to the string, the Lorentz Force causing deflection in the string along multiple axes that can be detected.

13. (original): The magnetometer as recited in claim 12, wherein the detector comprises a position sensitive lateral cell optical detector.

14. (original): The magnetometer as recited in claim 12, wherein the detector comprises a multi-cell optical detector.

15. (original): The magnetometer as recited in claim 12, wherein the detector comprises a CCD detector.

16. (original): The magnetometer as recited in claim 12, further comprising a defect in the fiber surface for increasing scattered amplitude and, hence, signal-to-noise ratio.

17. (original): The magnetometer as recited in claim 12, further comprising a scattering means in the center of the fiber for increasing scattered amplitude and, hence, signal-to-noise ratio.

18. (previously presented): The magnetometer as recited in claim 12, further comprising a second aperture in the conducting material on the fiber, the second aperture being orthogonal to the first aperture for simultaneous measurement of two orthogonal vector components of the motion of the fiber and, hence, two magnetic field components.

Claims 19-23 canceled

24. (currently amended): A method for detecting multiple vector magnetic fields comprising the steps of:

supporting a light conducting fiber coated with an electrically conducting material in tension at two locations, the fiber being capable of vibrating in any direction orthogonal to its axis;

forming an aperture in the conducting material on the fiber;

inserting a current and light at one end of the fiber and extracting the current and light at the other end;

placing the fiber in a magnetic field perpendicular to the direction of the current in the fiber, there by producing a Lorentz Force perpendicular to the fiber, the Lorentz Force causing deflection in the fiber;

varying the tension of the fiber;

detecting the light escaping through the aperture; and

detecting the deflection in the fiber along multiple axes.

Claim 25 canceled

26. (currently amended): The magnetometer array as recited in claim 10, wherein each of the plurality of electrically conducting strings comprises an insulating fiber coated with an electrically conducting material.

27. (previously presented): The magnetometer of claim 26, further comprising a light source for inserting light into the fiber, wherein the fiber is light conducting.